



## **Primary Liver Tumors and Metastases Resection in Children: The Potential of Fluorescence-Guided Techniques**

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**Aim of the study:** In this single-center case series study, we present our experience with the application of ICG in the resection of primary liver tumors and metastases.

**Methods:** From 2021 to 2023, we performed 10 primary liver tumor resections with ICG guidance – hepatoblastoma (HBL) in six patients, hepatocarcinoma (HCC) in two, rhabdomyosarcoma (RMS) in one and sarcoma in one. In one patient, ICG was used to properly determine the exact extent of the HCC tumor before liver transplantation. We have also performed five thoracoscopic pulmonary metastatic lesion resections in three patients.

**Main results:** We performed 16 ICG fluorescence procedures in liver tumors and metastasis resection. The age of patients ranged from 1,5 to 15,4 years (median 3,4 years), body mass ranged from 8,6 to 80 kg (median 13 kg), and time of follow-up ranged from 1 to 34 months (median 13 months). We didn't encounter any side effects of ICG administration in our series. In all of the cases, R0 resection was achieved. We have obtained false positive resection results in four cases of liver resection and two cases of pulmonary metastasis resection. Nine out of eleven patients remain disease-free. One patient with HCC after LTx is alive with recurrent disease 15 months after the initial procedure. One patient with RMS died 8 months after the operation.

**Conclusions:** ICG is a sensitive adjunct in identifying primary liver tumors and metastatic lesions. False-positive results limit specificity, but in our group, they did not contribute to any postoperative complications.